

## **Green Sand Molding Modules**

### *GSM1: Green Sand Raw Materials*

In this module, we will identify the different types of sand, clay, and additives that go into making a green sand mold. We will also discuss the features and properties that affect compactability and the role of water in a green sand mold. By the end of the module, you will be able to identify and assess raw materials used in creating high quality green sand molds. Estimated module time is 30 minutes. CEU units awarded: 0.1 CEU units.

### *GSM2: Green Sand Preparation and Quality Control*

In this module, we will explore the mulling sequence of horizontal wheel mullers and identify primary tests involved in basic process control. This module will also explore green sand strengths and requirements for different alloys. By the end of the module, you will be able to analyze raw material issues that may affect the quality of green sand molding outcomes. Estimated module time is 15 minutes. CEU units awarded: 0.1 CEU units.

### *GSM3: Green Sand Molding Equipment*

In this module, we will identify the five key pieces of molding equipment needed to make a quality green sand mold. Proper maintenance of each piece of equipment is also discussed. This module also consists of an optional safety section concerning personal protective equipment (PPE) and molding equipment. By the end of the module, you will be able to describe the measures required to use and maintain equipment appropriately and safely. Estimate module time is 15 minutes. CEU units awarded: 0.1 CEU units.

### *GSM4: Green Sand Molding Process*

In this module, we will explore how to make a quality green sand mold. We will identify the parts needed to make a mold. We will also describe several molding processes used and address the topic of venting. By the end of the module, you will be able to list the steps needed for preparing high quality green sand molds. Estimated module time is 1 hour. CEU units awarded: 0.1 CEU units.

### *GSM5: Green Sand Compaction*

In this module, we will explore the different types of sand compaction. This module will also state ways to prevent and resolve sand compaction problems. By the end of the module, you will be able to list the four methods to compact sand to ensure optimum quality castings. Estimated module time is 20 minutes. CEU units awarded: 0.1 CEU units.

*GSM6: Introduction to Green Sand Defects*

In this module, we will identify the visual inspection and physical properties needed to look at green sand defects. This module will also identify the causes of common green sand defects. By the end of the module, you will be able to identify one shrinkage defect, one gas porosity defect, one sand adherence defect, one sand strength defect, and one sand expansion defect. Estimate module time is 45 minutes. CEU units awarded: 0.1 CEU units.